

Serial Number: 10/099,656 (Tong Zhang) contd. 2  
 Examiner: Quyen Phan Leung / GAU 2828 Final Amendment

This is a continuation-in-part of the patent pending of Serial Number 08/861,247, Filed 5/20/97, now patent 6,373,868, granted 2002, in turn a continuation-in-part of Serial Number 08/538,868, Filed 10/04/95, now abandoned after receiving the allowance, in turn a continuation-in-part of Serial Number 08/043,006, Filed 5/28/93, now patent 5,515,394, granted 96. The former two refer to multipass pumping geometry for diode-pumped solid-state lasers, fiber lasers and optical amplifier, and the latter refers to slab lasers and one-dimensional beam expanding cavity.

**Page 29** Line 24

**Fig. 9B** is the top view to mainly show a thin, tapered, planar optical duct 17, in which diode bar 11, heat sink 7 and HR mirror 21 are not shown. Please attention to that there is a gold coating 4 started at the end part of two tilted sides of optical duct 17. In view of the fact that, while the pumping beams are incident on the tilted sides, the angle between the pumping beams and the tilted side would be increased the amount of the tapered angle for each reflection, finally resulting in the failure of TIR on the two tilted sides. Therefore, in such cases, gold coating 4 or a mirror 20 is necessary to be used to confine the pumping beams.

Fig. 9B is the top view to mainly show a thin, tapered, planar optical duct 17, in which diode bar 11, heat sink 7 and HR mirror 21 are not shown. Please attention to that there is a gold coating 4 started at the end part of two tilted sides of optical duct 17. In view of the fact that, while the pumping beams are incident on the tilted sides, ~~the incident angle would be increased twice amount of the original incident~~ the angle between the pumping beams and the tilted side would be increased the amount of the tapered angle for each reflection, finally resulting in the failure of TIR on the two tilted sides. Therefore, in such cases, gold coating 4 or a mirror 20 is necessary to be used to confine the pumping beams.

**Page 37** Line 8, after "tips." add

This situation will also benefit the laser operation for a quasi three-level laser system.

**Page 37** Line 17, change "large" to --- small ---;

**Page 37** Line 31, between line 30 and line 32, add

--- Furthermore, the end of thin planar optical duct 17 adjacent to laser slab 2 is tilted and gold coated in order to change the incident angles of the pumping beams for effective zig-zag pumping.---

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**Page 37** Line 32 to 34

Laser slab 2 is sandwiched between two  $\text{MgF}_2$  optical ducts 17 and two heat sinks 7 symmetrically. Each heat sink 7 has a mirrored surface 21 which is interfaced with the broad surface of thin planar optical duct 17 in order to reflect the pumping beams and realize multipass pumping. The redundant description will be avoided for simplicity. Note that two heat sinks 7 in Figs. 15K and 15M and diode bar 11 in Fig. 15L are not shown for simplicity.

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**Page 39** Line 19, delete "laminar coolant flow or."

**Page 40** Line 7-9, delete "There are two slots 49 ---the HR coating 50."

**Page 45** Line 27, change "8" to --- 4 ---.

**Page 47** Line 18, change "abound" to --- around ---.

**Page 48** Line 25, change "XIV" to --- XII ---.

**Page 49**

Line 27, change "60 to 80-W" to --- 40-W ---.

Line 28, change "25 to 50-W" to --- 20-W ---.

Line 33, change "form" to --- from ---.

Line 34, change "several" to --- many ---.

Line 35, change "several" to --- a multiple ---.

**Page 51** Line 3, change "and 1-W blue" to --- or blue ---.

Very respectfully,

Tong Zhang  
Applicant

Pro Se

*Tong Zhang*

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